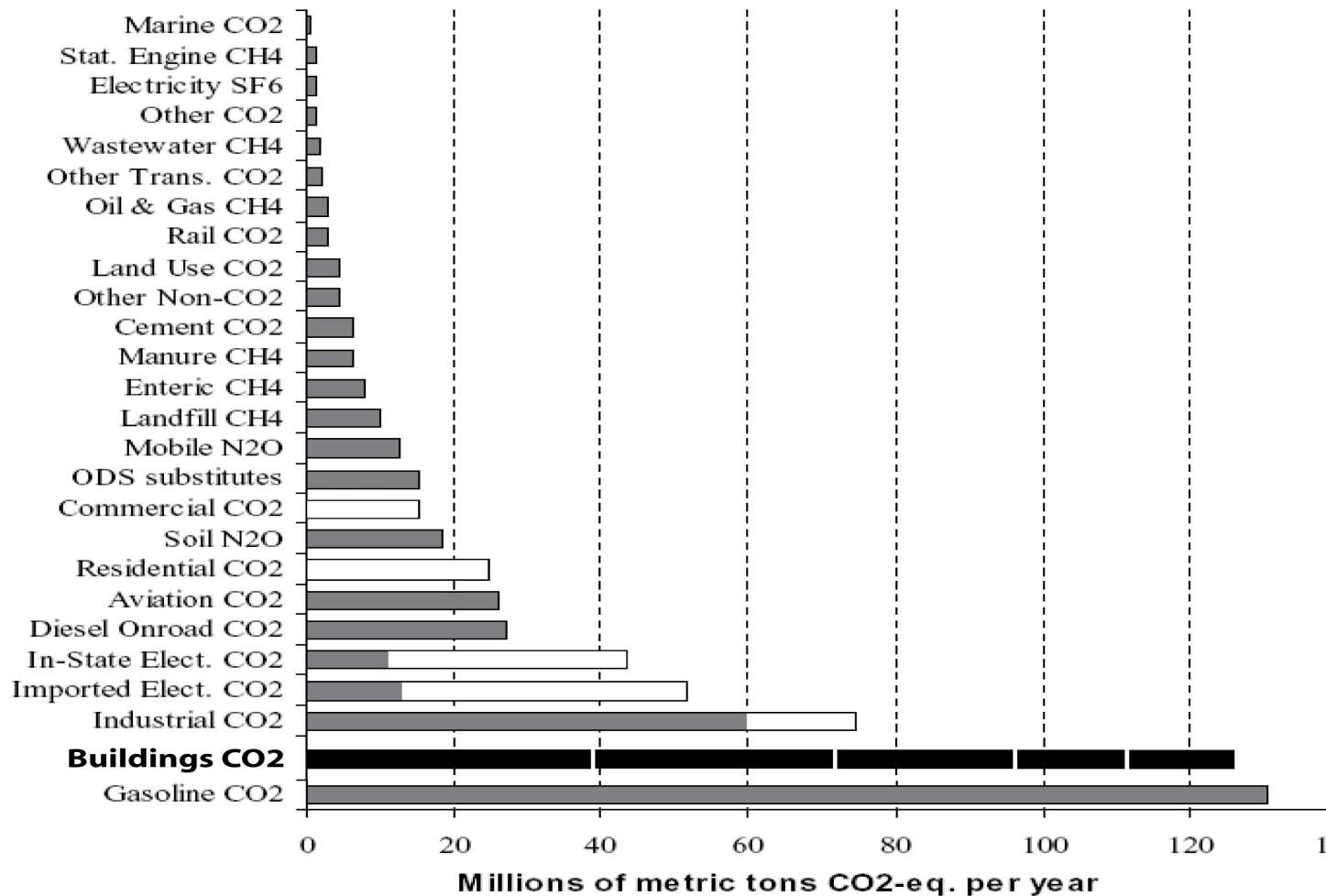


Building and Appliance Standards

Martha Brook & Bill Knox
California Energy Commission



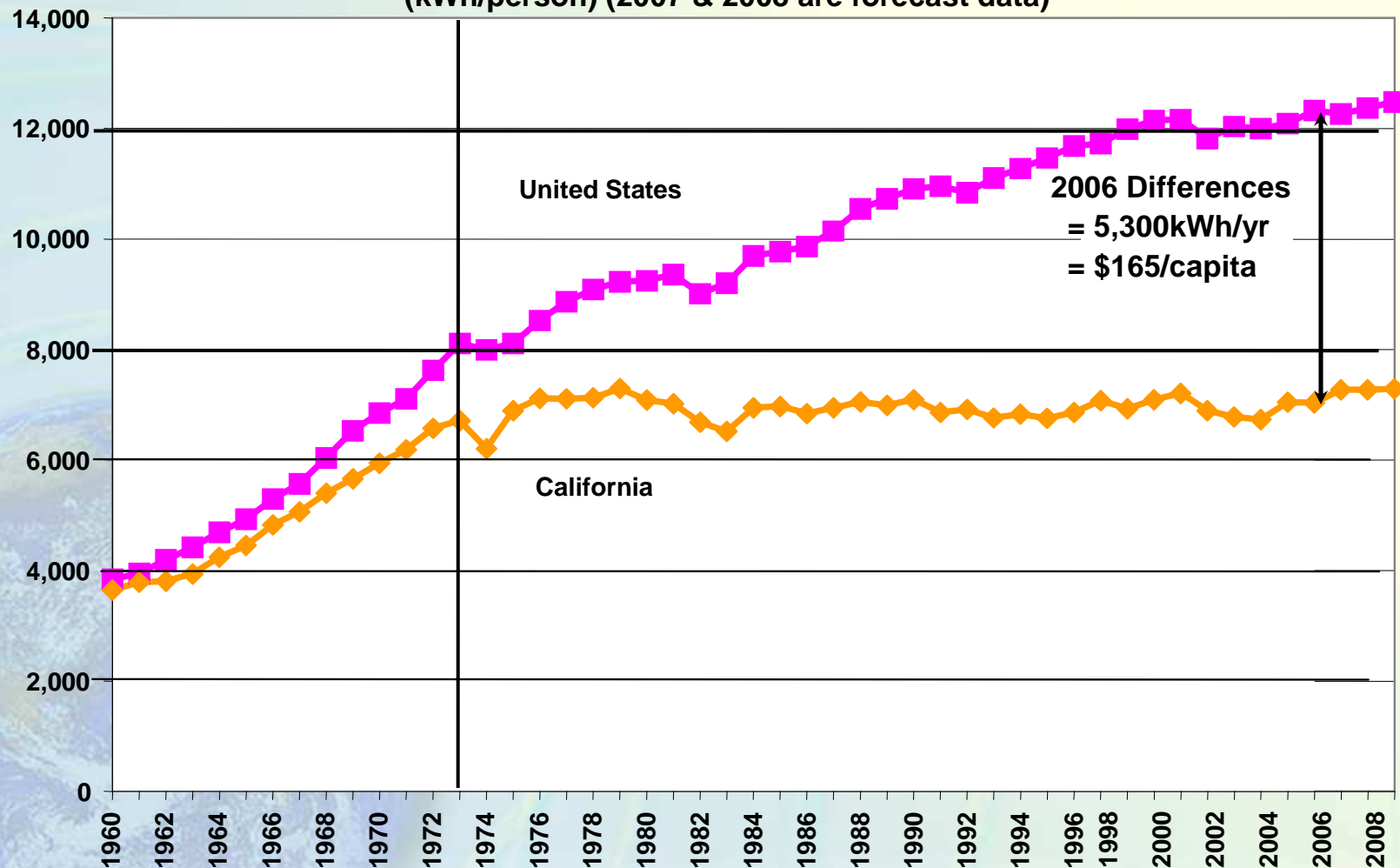
Climate Change: Why Focus on Buildings?



Source: EIA data as presented by Ed Mazria

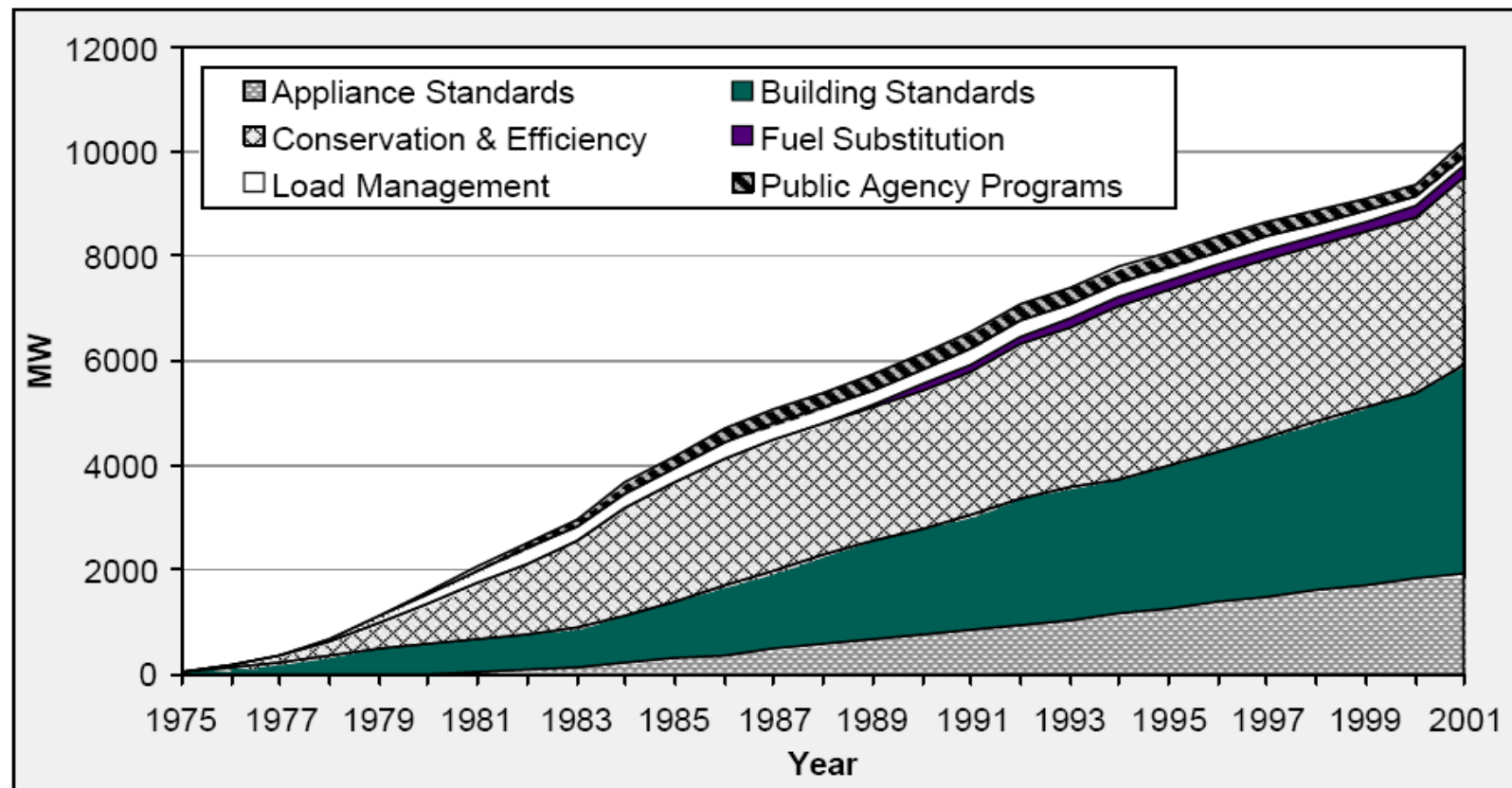
California Per Capita Electricity Sales

Per Capita Electricity Sales (not including self-generation)
(kWh/person) (2007 & 2008 are forecast data)



Energy Efficiency Components

MW Savings from Programs Begun Prior to 2001



Efficiency programs and standards have contributed equally to achieving significant peak demand savings over the past 26 years.

Source: California Energy Commission

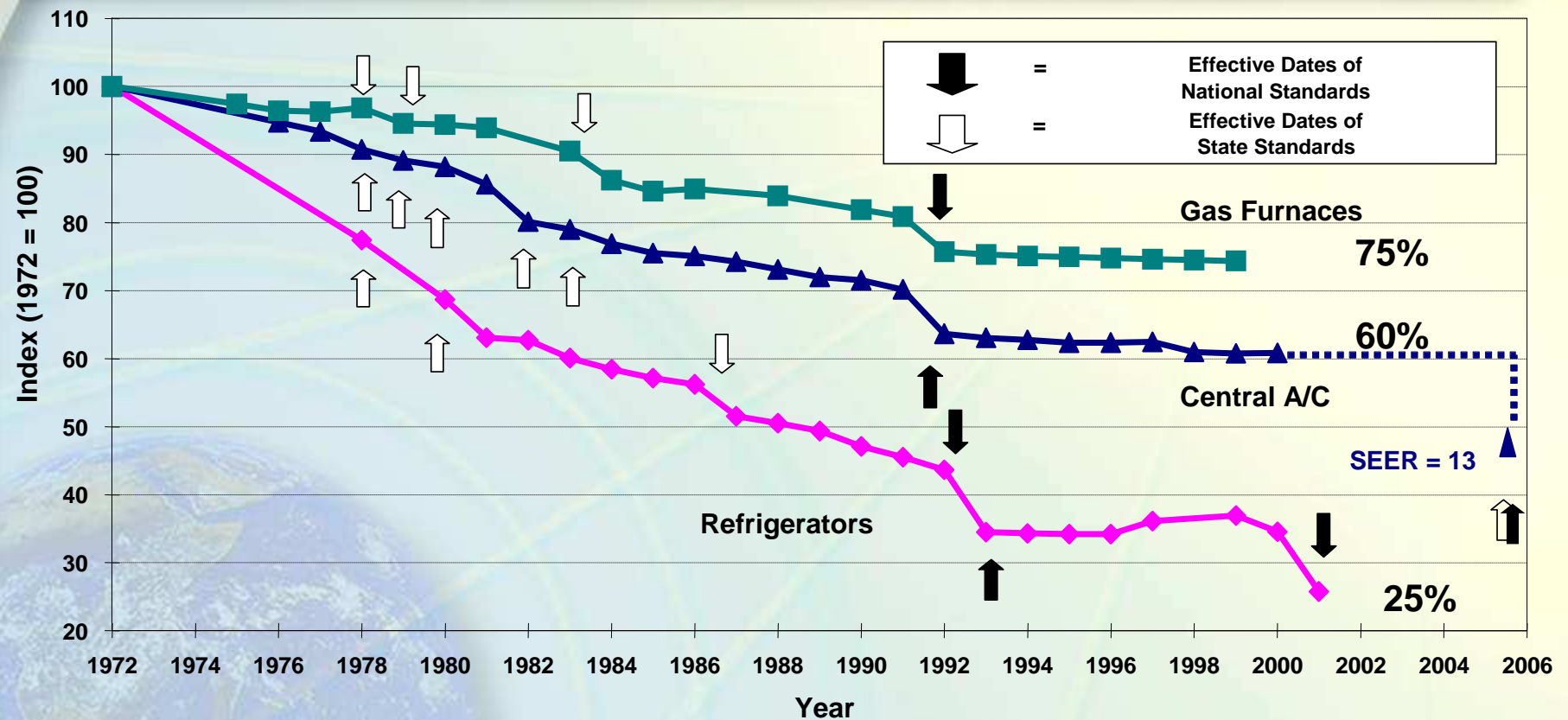
Legislative Mandates for Energy Efficiency Standards

- Building Design & Construction Standards
- New Construction & Alterations
- Prescriptive & Performance Standards
- Residential and Nonresidential
- Appliances Sold in California
- Cost Effective when Amortized Over Life of the Building
- Periodically Update
- Water Efficiency Standards

Building & Appliance Standards

- Early Actions
- Major Tool to Achieve Energy Savings
- One-Time Administrative Cost to Develop
- Recurring Annual Benefits – Construction, Alteration, Appliances Manufactured
- PIER → ET → Incentives → Standards
- Incentives “Exit Strategy”
- Utility Codes and Standards Program
- Driver for Both Energy Efficiency and PVs

Impact of Standards on 3 Appliances



Source: S. Nadel, ACEEE,
in ECEEE 2003 Summer Study, www.eceee.org

2008 Building Standards Changes

- Cool Roof requirements for steep-sloped roofs
- Lower Lighting Power Density for some NR
- Occupant Sensors Required for some NR
- Increased NR Insulation Requirements
- Requirements for Refrigerated Warehouses
- Lower Residential Window U-factors
- Updated Swimming Pool and Spa Requirements
- Residential HVAC – Furnace Fan, A/C Airflow
- Water Heating – MF recirculation controls, Pipe Insulation Under Slabs

Appliance Standards: What's Next

- Get Started in 2008
- Work Closely with Utility Codes and Standards
- High Efficacy General Service Lighting
- Battery Chargers
- Consumer Electronics
- Other Appliances to be Identified